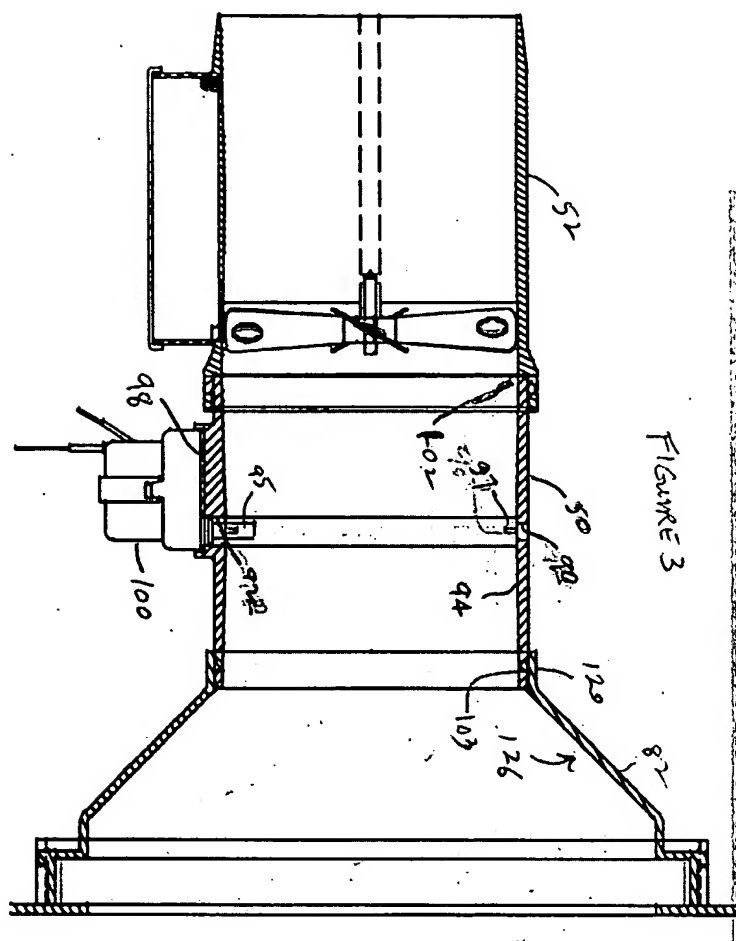


FIGURE 12

BEST AVAILABLE COPY



BEST AVAILABLE COPY

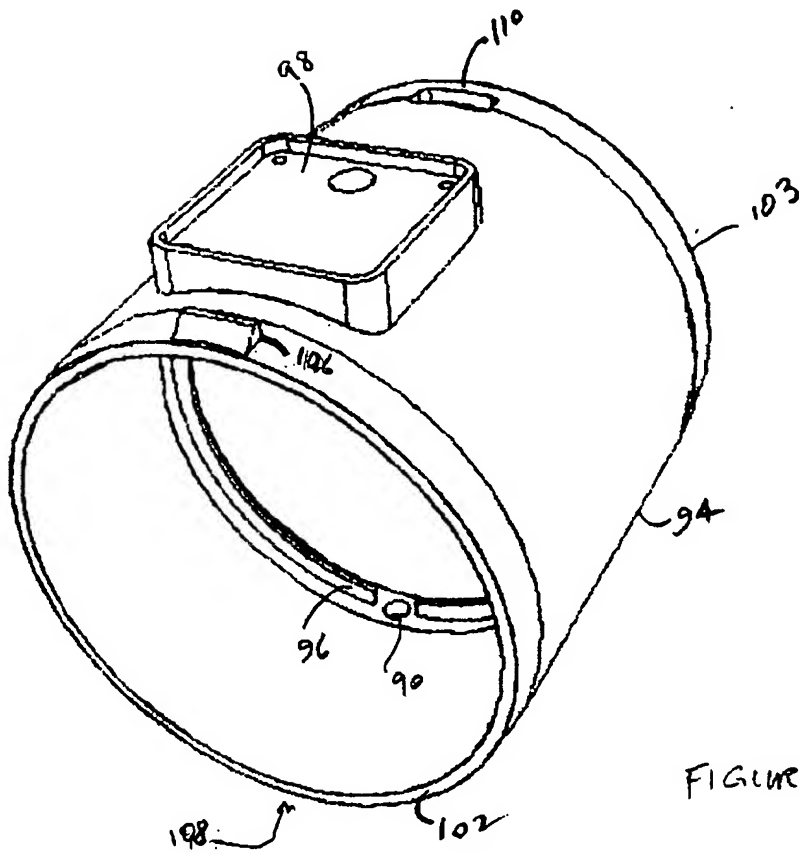


FIGURE 4

BEST AVAILABLE COPY

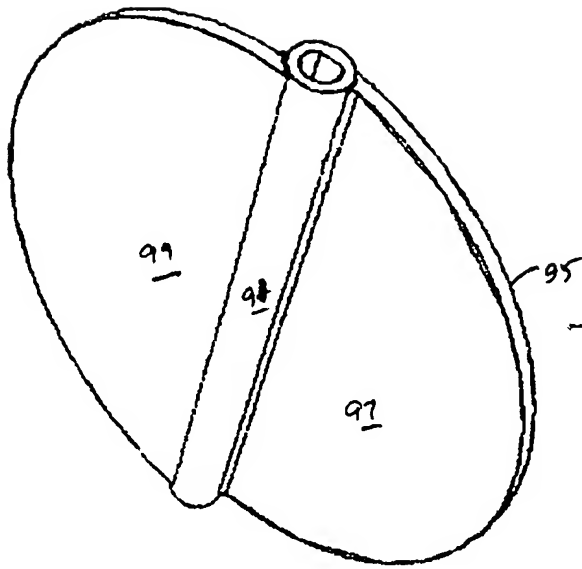


FIGURE 5

BEST AVAILABLE COPY

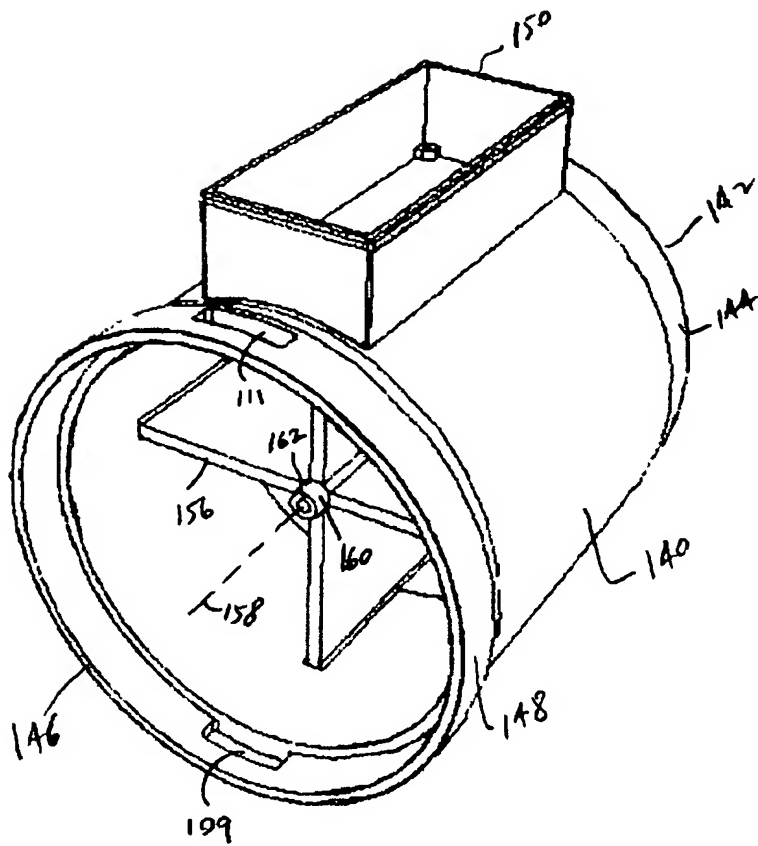


FIGURE 6

BEST AVAILABLE COPY

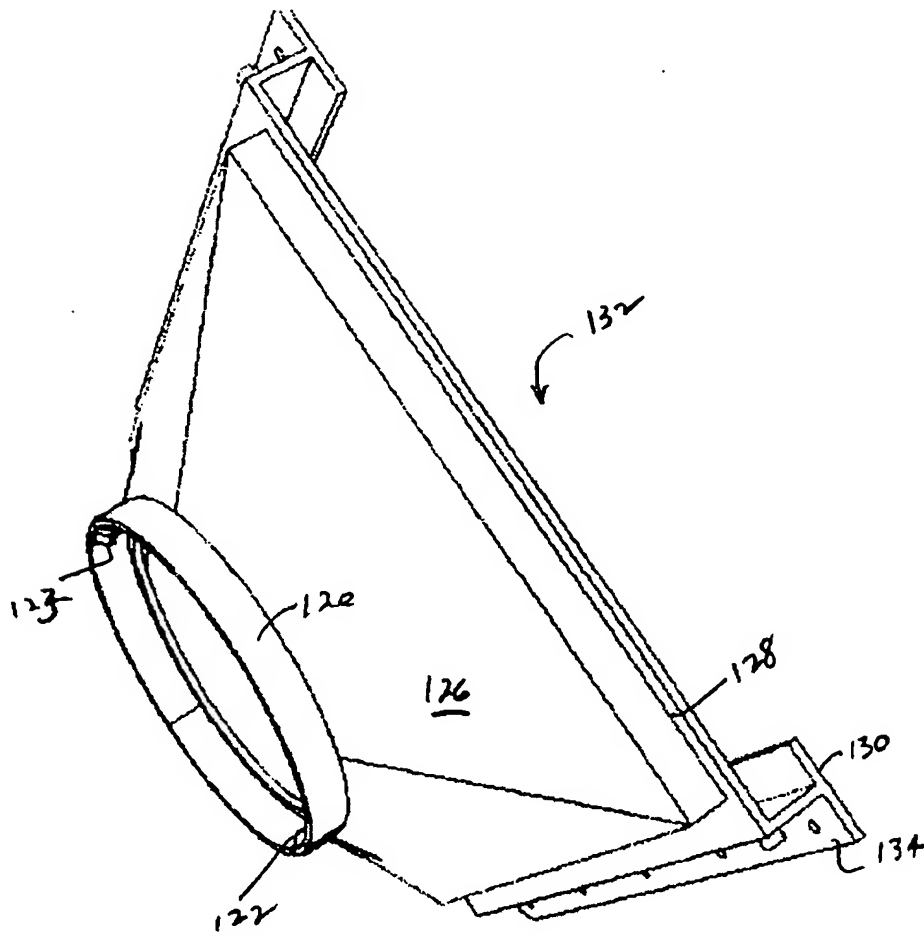


FIGURE 7

BEST AVAILABLE COPY

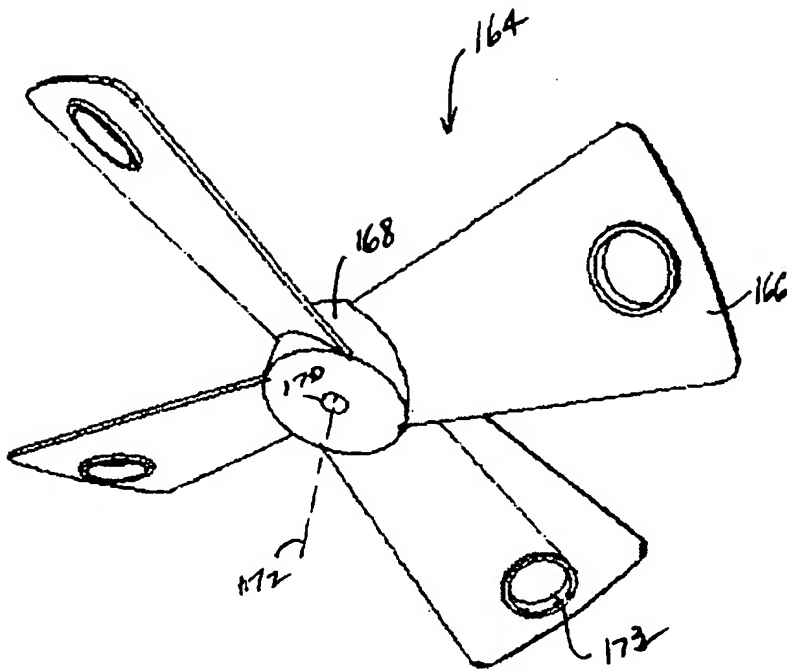
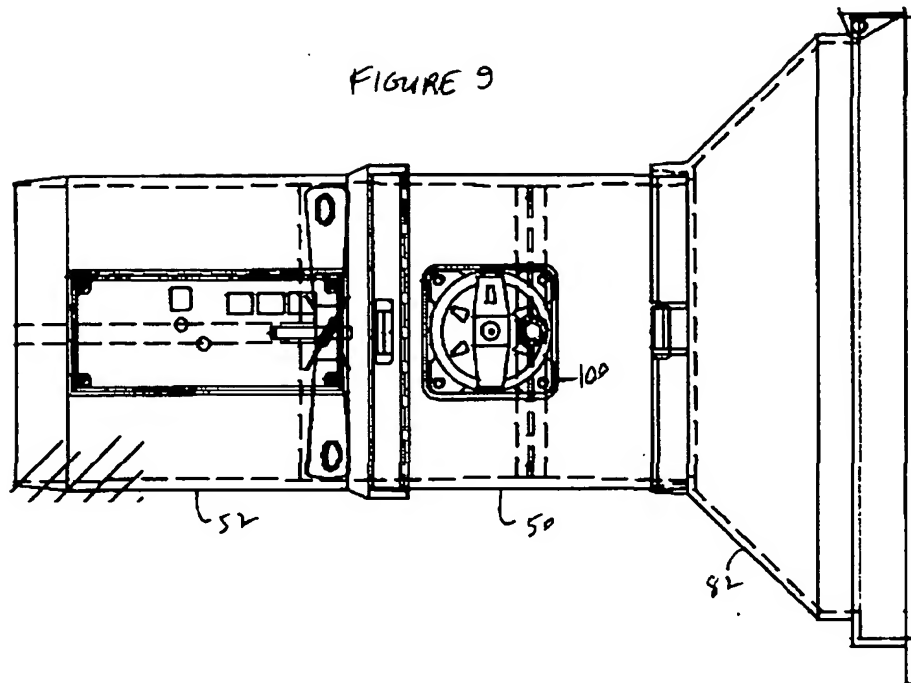


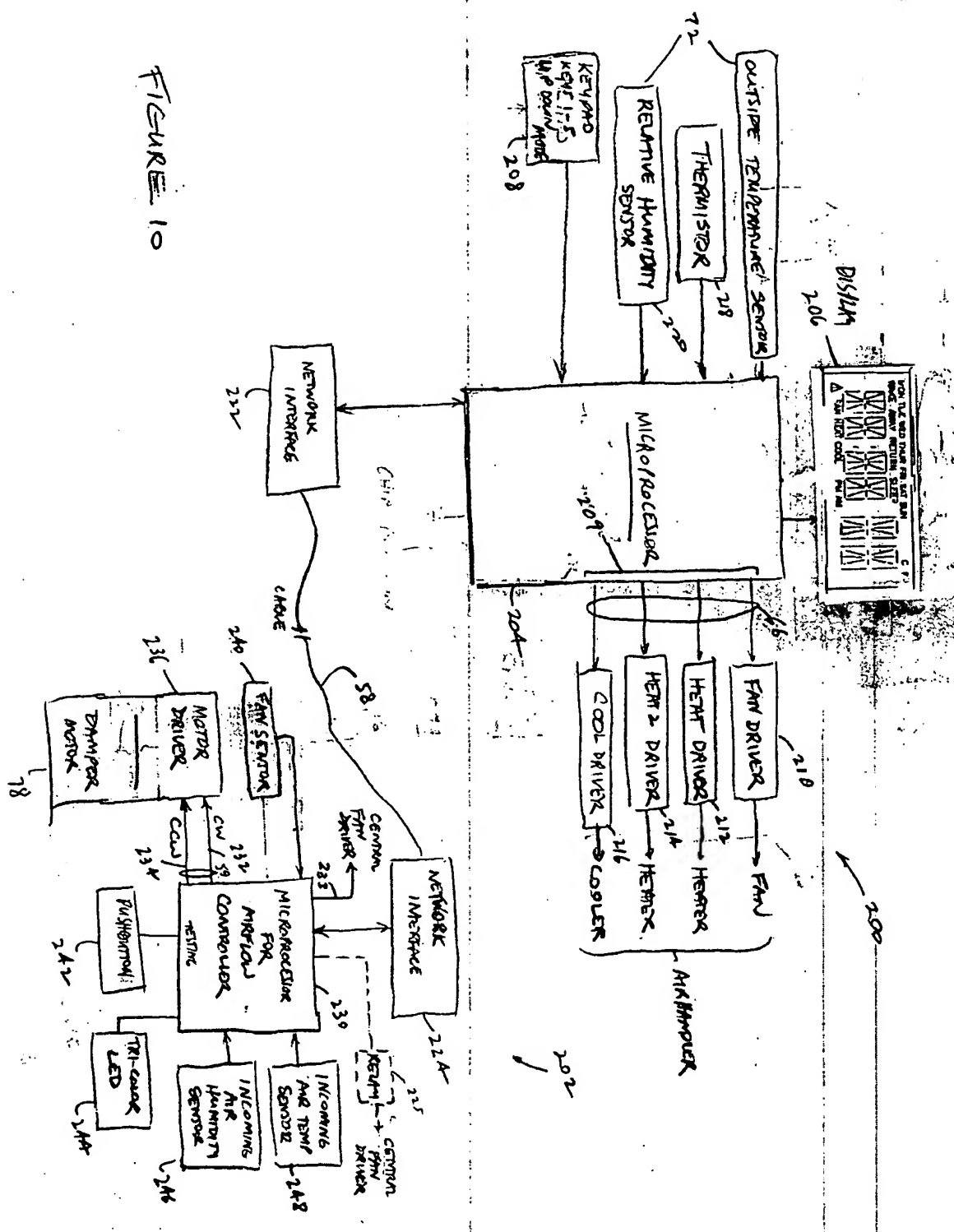
FIGURE 8

BEST AVAILABLE COPY



BEST AVAILABLE COPY

BEST AVAILABLE COPY



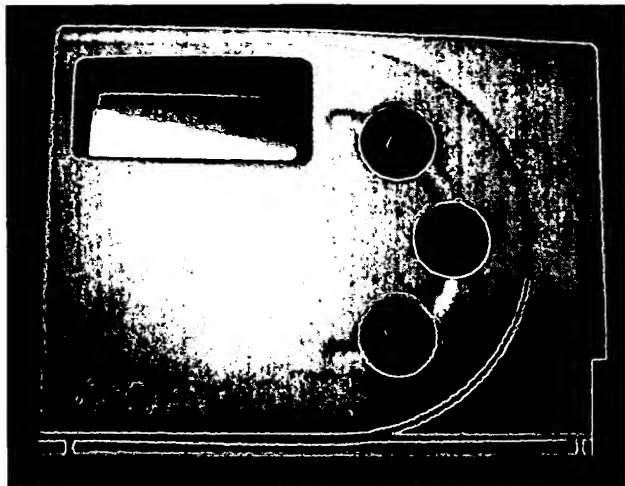
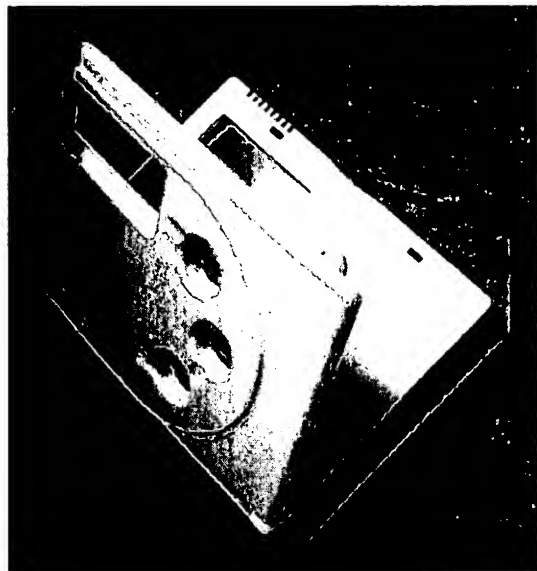


Figure 11A



15 Figure 11B

BEST AVAILABLE COPY

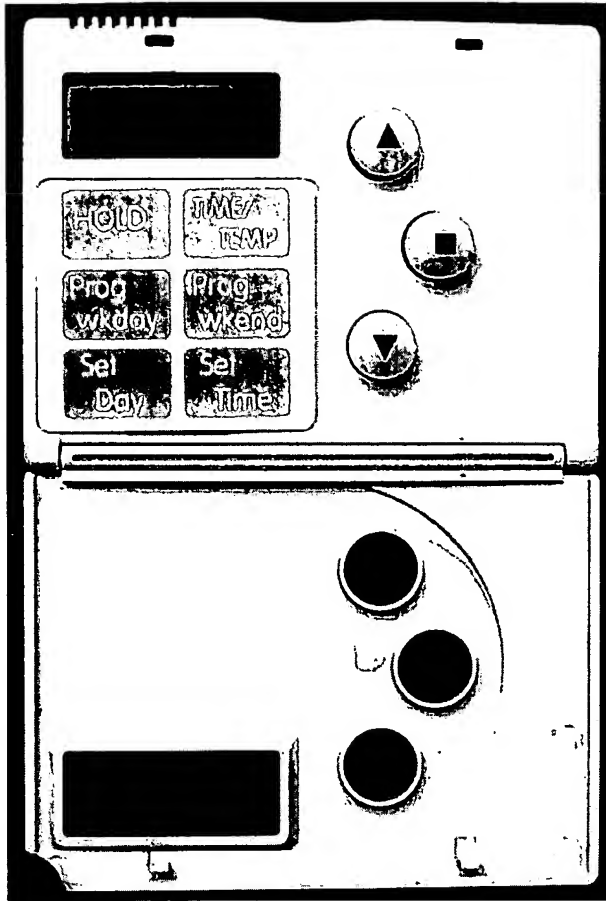
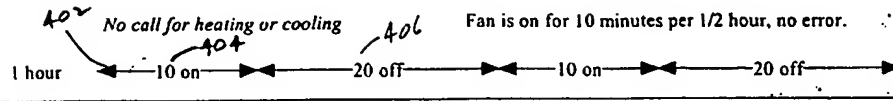


Figure 11C

BEST AVAILABLE COPY

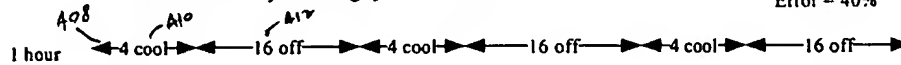
Example: Fan on = 10 minutes
Fan off = 20 minutes

Desired fan duty cycle = 33%
Desired period = 30 minutes



Example: Air-conditioning is on.
There is a 4 minute call for cooling
then another call for cooling after 16 minutes

Total run time was 8 minutes first half hour,
4 minutes second half hour or an average of
12 minutes/hour.
Error = 40%



20 minute off time is never met to force fan on, short on time was not taken into account.

FIGURE 12

Fan period = 30 minutes
Fan min run time = 10 minutes
Same target as example 1.

Desired fan duty cycle = 33%
Desired period = 30 minutes

Same example: Air-conditioning is on.
There is a 4 minute call for cooling
then another call for cooling after 16 minutes

Total run time was 10 minutes/half hour
Or 33% duty cycle.
Error rate = 0%

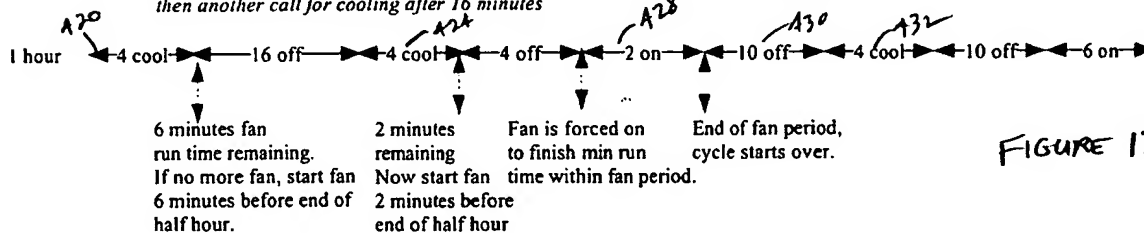
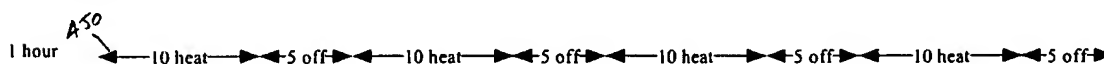


FIGURE 13

Example: Vent open = 10 minutes
Vent closed = 20 minutes

Desired vent open = 33%



Same example: Heat is on.
There is a 10 minute call for heating
then another call for heating after 5 minutes

Damper is open 20 minutes/ 1/2 hour or 40 minutes/hour
when desired 33% duty would be 20 minutes/hour.
Error rate = 100%

FIGURE 14

Vent timing - new method, measure flow volume.

Example: Fresh air rate is set at 30cfm. A_F
Fan min run time is set to 10 minutes. F_M
Fan duty cycle is set to 30 minutes. F_P

Controller calculates a required flow rate of 90 cfm for 10 minutes every 30 minutes
to meet 30cfm constant flow.

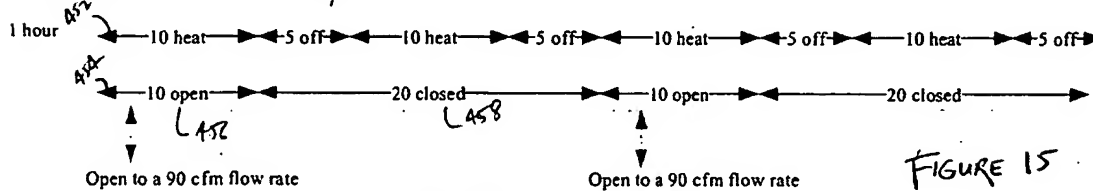


FIGURE 15

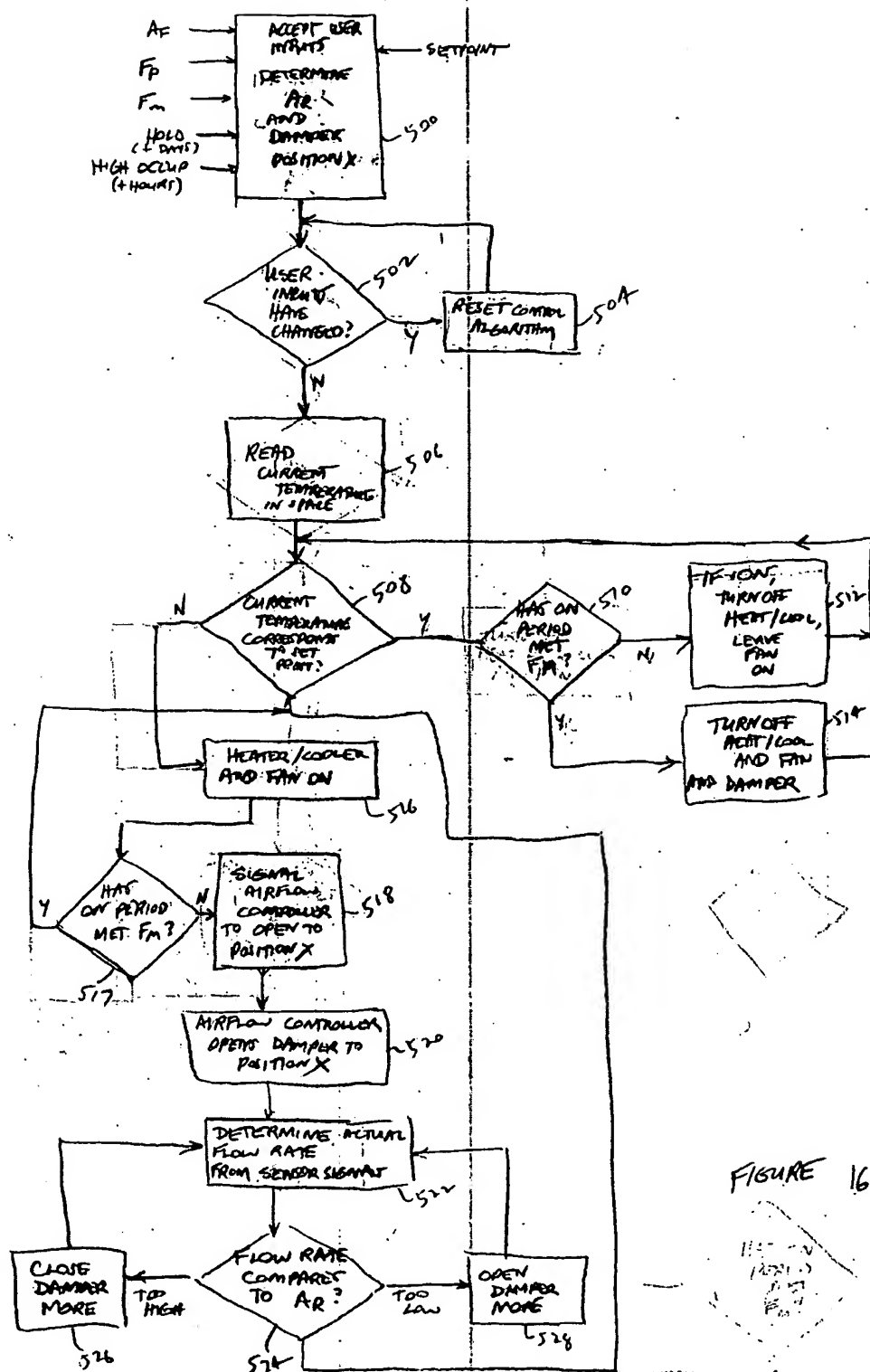


FIGURE 16